WORKING TOGETHER FOR A HEALTHIER FUTURE

AUTUMN EDITION 2013

Livestock MATTERS

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Inside this issue:

Mastitis control

A special feature discussing the importance of establishing the cause of mastitis to bring levels under control.

Cow comfort

We see how significant improvements to cow comfort and calf management have resulted in a boost in milk production and healthier calves on one farm.

xLvets Excellence in Practice

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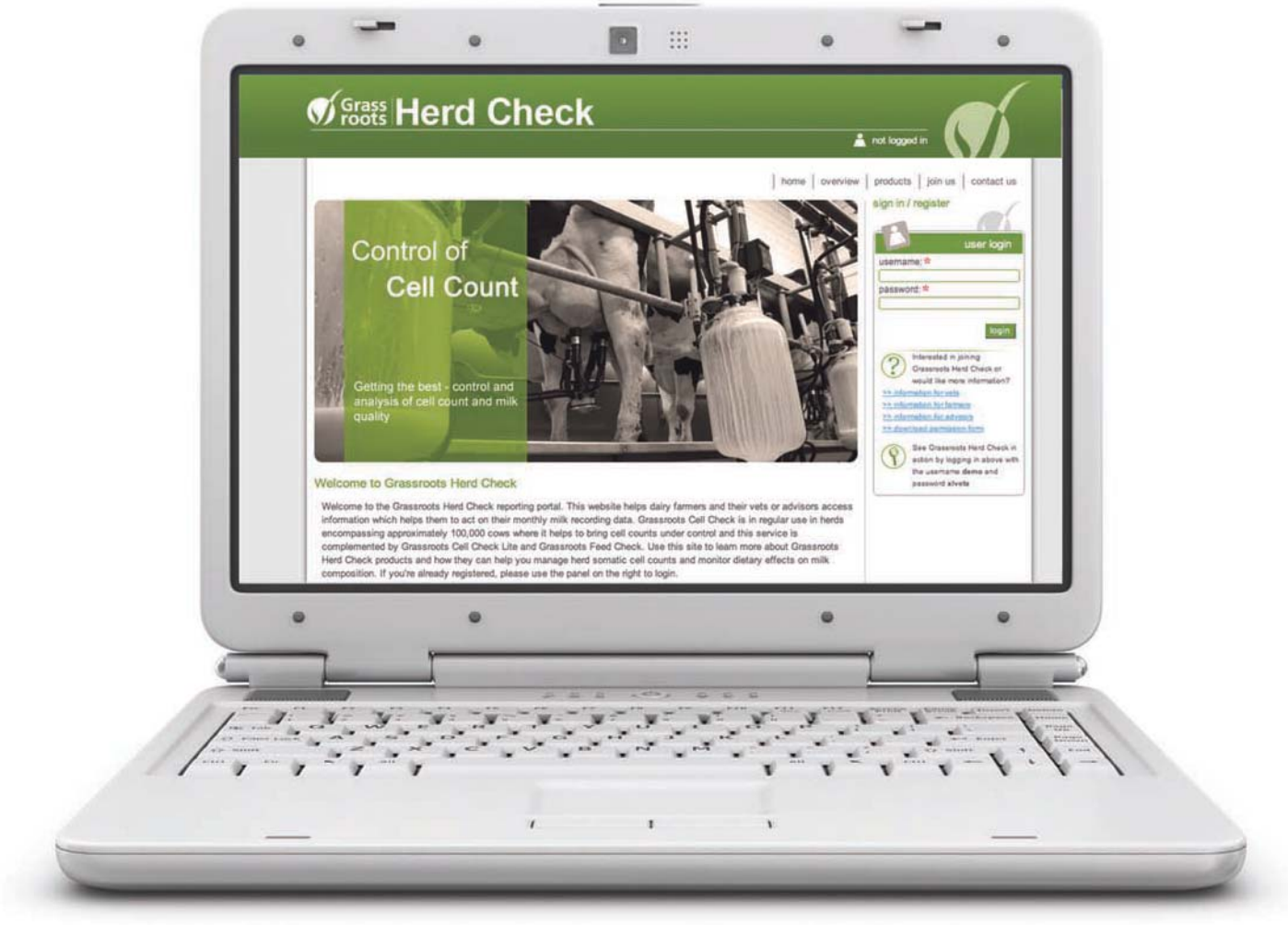

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AUTUMN EDITION

XLVets is a novel and exciting initiative conceived from within the veterinary profession. We are all independently owned, progressive veterinary practices located throughout the United Kingdom committed to working together for the benefit of our clients.

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THE EDITOR

Welcome to the 'Autumn' issue of Livestock Matters

In this issue we have a feature on mastitis - looking at the causes and how two farms have tackled very different mastitis problems.

We also take a look behind the scenes of this year's Gold Cup winning herd, looking at the attention to detail and teamwork that helped them win the award.

As housing will soon be with us, we also see how one producer and XLVets practice have been working on significant improvements to cow comfort and the results this has generated through a boost in milk production and lower incidence of lameness.

Finally we have an update from our two students in the popular Student Diaries column, hearing what they have been up to over the summer months, before they return to their studies in the Autumn.

We hope you enjoy this issue.

Joanne Sharpe XLVets

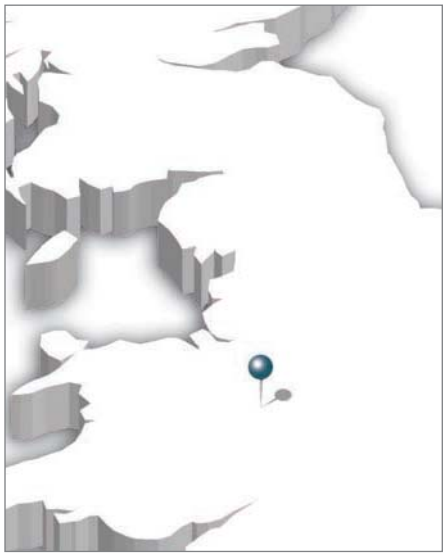
ANIMAL HEALTH

INDUSTRY FEATURES

AUTUMN FEATURE

Mastitis

XLVets new member practice...
Severn Edge Veterinary Group



Severn Edge Veterinary Group is a 25-vet practice based in south east Shropshire. They provide care for all species through separate farm, small animal and equine departments.

Severn Edge have a team of six experienced and dedicated farm vets, who provide a rapid response, 24-hour service to farms throughout South Shropshire and parts of Worcestershire, Staffordshire and West Midlands. They serve a wide variety of livestock clients with dairy, beef suckler, beef and sheep enterprises. Severn Edge also have a few large pig herds and an increasing number of small holders and hobby farmers. As farm margins become tighter and productivity is now key to a profitable enterprise, Severn Edge Veterinary Group is striving to be involved with the economics of disease and to provide a cost-effective veterinary service for their farm clients. Farmertraining meetings are also an important aspect of their service provision.

Throughout the practice Severn Edge aim to be progressive, adopting new therapies and treatments as appropriate. In today's ever more competitive veterinary market sharing of resources with like-minded veterinary practices makes good clinical and business sense and is one of their key reasons for joining the XLVets group. Severn Edge shares the XLVets' ethos of clinical excellence allied to sound business principles and as such they look forward to contributing to XLVets' continuing development.

Livestock 2013

This year's Livestock 2013 returned to Birmingham's NEC for another busy two days. It was fantastic to see so many people proudly wearing the unmissable FarmSkills green t-shirts. There were so many different activities going on, and so many friendly faces discussing everything from colostrum quality to 'what they were going to use their green bucket for?'.

The BVD skittles drew lots of attention and were a great tool for explaining the traffic light warning system for BVD. This was also highlighted during Jonathan Statham, Bishopton Veterinary Group farm health planning seminar, discussing a BVD free England; implementing control on-farm. The California milk test and 'the guess the weight of the calf' were also very popular; they provided a great opportunity to get farmers to discuss current issues on-farm and to have a go with equipment that is simple to use and very effective. The weigh tapes proved to be a valuable commodity and something to be closely guarded to avoid any mysterious disappearances!

We also had six laptops on the stand which we were able to use to demonstrate the Grassroots Herd Check programme; we had lots of interest and offered a free Grassroots Cell Check Lite report to anyone that signed up on the stand. The laptops were also used to demonstrate the new FarmSkills website, both sites worked really well and it was great to see farmers, students and advisors filling in the 'contact me' page for more FarmSkills information. The positive feedback from the FarmSkills courses that have been run over the past year was very encouraging too.

We would like to say a big thank you to all the members that came along and volunteered their time to man the XLVets stand over the two days.

The Cream Awards

The Cream Awards ceremony took place on the 5th September at the National Motorcycle Museum, Birmingham. The awards saw 450 guests including UK dairy producers, vets, feed merchants, food processors and retailers, gather together to **celebrate excellence and innovation throughout the UK dairy industry.**

Compere for the evening was BBC TV's Adam Henson, who read out the names of more than 30 winning and commended businesses and people. The Awards also featured guest speaker, Dr Gordie Jones, Managing Partner at the Central Sands Dairy in Wisconsin. Dr Jones gave an informative and inspirational account of the benefits of large scale dairy farming, both for the farmer and the cow, with particular emphasis on cow health.

Awards were presented across a wide range of specialist categories to recognise continued contribution and commitment to the sector. The categories included Dairy Ambassador of the Year, High Fertility Awards, Health and Welfare Award, Dairy Vet of the year and SQP of the Year.

It was fantastic to see several XLVets member practices and farm clients of XLVets member practices winning awards on the night, congratulations to everyone:

Colin Lindsay, Capontree Veterinary Centre, on being awarded **Dairy Vet of the Year**

Dan Stevenson, Lambert Leonard and May was shortlisted **Dairy Vet of the Year**

Y Farming partnership, client of Shepton Veterinary Group on being awarded the **High Fertility Award**

Neil Baker, (Bakers of Haselbury Pluckett), client of Synergy Farm Health Ltd. **Highly commended Health and Welfare award**

Neil Baker, (Bakers of Haselbury Pluckett), client of Synergy Farm Health Ltd. **Commended Forage Manager of the year**

Mark Verity, client of Lambert, Leonard & May (Lancs.) who was winner of the **Health and Welfare Award**

JIM WILLSHIRE, ENDELL VETERINARY GROUP

Improvements to cow comfort boost yield...

and investments in calf housing boost heifer numbers

Jim Willshire and Andy Mathews

Over the past 18 months, XLVets' Jim Willshire from Endell Veterinary Group has been helping herd manager Andy Mathews make some significant improvements to cow comfort and calf management on the dairy unit of Shaftesbury Estate's St Giles Farms Ltd, near Blandford Forum, in Dorset. The net result is a boost in milk production, reduced lameness, and healthier calves with higher growth rates.

Veterinary surgeon Jim Willshire

XLVets practice Endell Veterinary Group

This 350-cow milking herd is run as three groups; heifers and high yielders which are kept housed, and low yielders which go out (along with the dry cows) to graze in the summer.

Twelve months ago, the herd had been yielding 7,400 litres per cow. But then a new target of 9,000 litres per cow was set by the Estate. Andy set about making changes to achieve this, and at the same time set his own personal goal of 10,000 litres per cow.

Improving cubicle comfort

Jim explains: 'Good cow comfort is the cornerstone to production. So Andy re-jigged the cow groups to give the high yielders the best accommodation, and set about improving the cubicles.' Jim advised Andy on increasing cubicle dimensions in the sheds where the cows were kept, to better accommodate their size; the neck rail has been raised and brisket board moved forward, as shown in Figure 1.

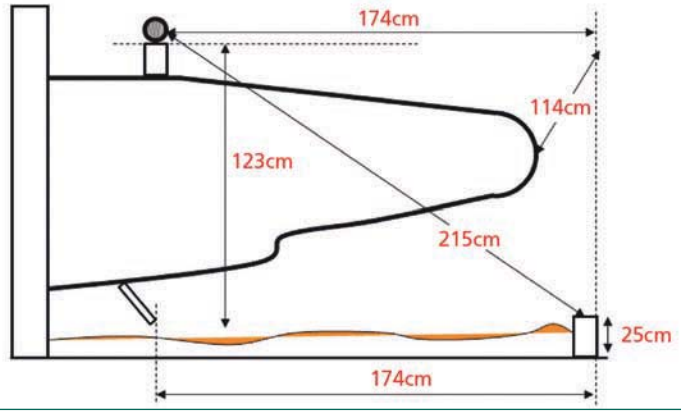


Figure 1: Revised cubicle design

In addition, changes to the bedding material were made; the ends of the cubicles were built up with wooden board, so that they could be filled with a 7" (18cm) depth of sand, instead of using sawdust over the mats. Fresh sand is added three times per week. Andy adds: 'Using sand has had a big impact on reducing mastitis cases. However, we are still working out how best to deal with the sand in the slurry.'

Through the year, the farm receives weekly visits from vet students, as the Royal Veterinary College (RVC) has a field station near Dorchester. As part of their studies, they monitor different aspects of herd health, and this has included assessing cubicle comfort, enabling an objective measure of the improvements to be made. Jim explains: 'Cubicle Comfort Indices (CCI) are calculated from the number of cows in the cubicles, and the proportion of them that are actually lying down. The target is at least 85%. In the old cubicles with sawdust, the shed with the high yielders scored 70%. But a recent scoring was 89%. Cubicles haven't been altered in the heifer sheds, but the change in bedding alone increased the CCI from 78% to 93%. 'With better cubicle comfort, cows lie down for longer, and this has a positive effect on milk yields,' says Jim.

Dry cows are loose-housed on straw. Jim adds: 'As part of the overall review of the buildings, a concrete kerb was put down in this shed, to better define the strawed-lying area and the feeding area. It allows 30% of the yard to be scraped clean on a daily basis and has reduced mastitis cases.'

Kerb defines laying area

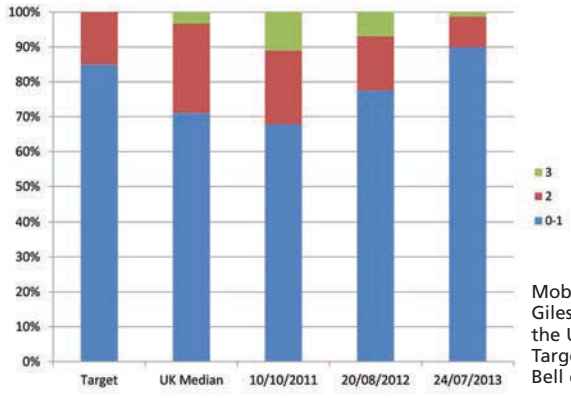
Reducing lameness

To reduce lameness, a more focused approach has also been taken with foot-trimming and foot-bathing. All in-milk cows are foot-bathed in 5% formalin, once every day, whilst dry cows and bulling heifers are treated twice weekly.

This, combined with more cows lying down in the extended cubicles, has reduced lameness, as shown by the mobility scores (see Figure 2): only 68% of cows had a good mobility score (0 or 1) in autumn 2011. However, in July this year, the figure had risen to 90% - beating the average on-farm score, and the suggested industry target of 85%.

Bedded on sand

Figure 2: Mobility scores at St Giles Farm



Mobility Scores at St Giles Farm, relative to the UK Median and Target ranges (Archer, Bell et.al., 2010)

Enlarged cubicles

Improved nutrition

Nutrition was another area which needed improvement. Andy explains: 'Cows were losing too much condition after calving, and we had high levels of milk fever and metritis. Heifers were thin too.'

The problems were resolved, by moving to complete TMR instead of using out of parlour feeders, and a change in nutritional advice.

An extra 2,000 litres per cow!

Andy explains: 'As a consequence of these changes, calving index has shortened from 420 to 391 days. And, average herd yield has risen by 2,000 litres per cow in just 18 months. It's now running at 9,400 litres per cow - so I've beaten the target I was given, and am on track to beat my own!'

Group calf pen

Calf care

Another area which required investment and changes in management was calf-rearing.

Too many calves were getting scours and pneumonia, and calf mortality was high. The problems arose due to old housing with poor drainage and management. Investment was needed. Jim adds: 'The key change has been the purchase of individual calf hutches. Andy persuaded his manager the investment was worth it by taking him to see some hutches in use, and suggesting they could always be sold on if they didn't fix the problem!'

The hutches are sited on a sheltered area of ground next to one of the sheds. The topsoil was taken off and used to make a bank to shelter them from the prevailing wind. Then crushed hard core was laid, and a slight slope created. The hutches are bedded with straw and calves stay there for seven weeks until weaned, and are fed twice daily with 2.6 litres of calf milk replacer. They then move into a group pen on the same site.

In-between calves, the hutch is cleaned and disinfected and relocated - so the ground it was on is rested for at least seven weeks. This further helps reduce risk of disease. Andy adds: 'These young calves used to be reared off-site, but now they are here with the cows, it's easier for us all to keep an eye on them. At 11 weeks of age, they are moved to another site, but now instead of being looked after by several people - just one person takes responsibility for their care. So they can have the satisfaction of a job well done, but are also wholly accountable for their health.'

Data from the RVC students who also monitor calf health, shows that thanks to the improved management and housing, calf growth rates in the first seven weeks, have risen significantly - from 300g/day to over 500g/day. And mortality losses have dropped to a very low 3-4%.

Easy to bed up

New calf hutches

New problem on the horizon!

All these improvements in heifer rearing and cow health have, however, created a new problem.

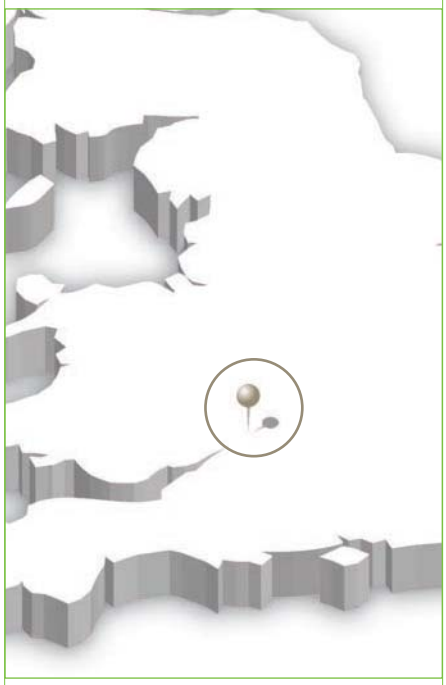
Originally, the shortage of heifer replacements and high involuntary culling rate had prompted Andy to buy in some freshly-calved Holsteins from Germany to maintain cow numbers.

But now there are 250 heifer replacements coming through and not enough space in the shed! So Andy and Jim will be making some decisions on which animals to proactively cull, or sell.

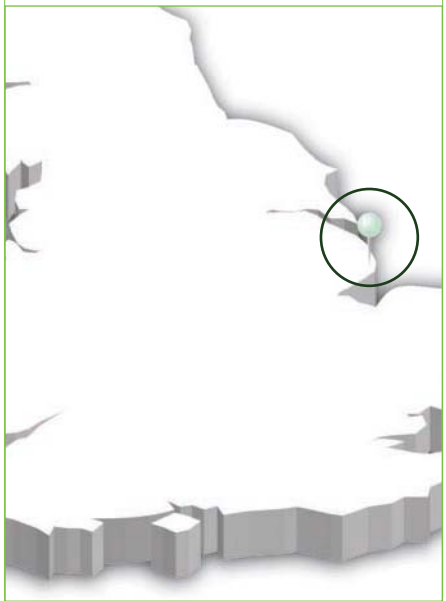
Jim adds: 'Andy has introduced all these changes step by step - waiting to see the benefits first, measuring them where possible, and only then moving on with the next change. In taking this controlled approach, he has been able to persuade his managers to make capital investments, and sanction changes in staffing. It's made a massive difference to herd health and productivity, and profitability too. And I know Andy hasn't finished yet…'

RUSSELL FULLER, TYNDALE VETS LTD
IAN BATES, FENWOLD VETERINARY PRACTICE

Different approaches, one common goal: Controlling liver fluke



Veterinary surgeon	Russell Fuller
XLVets practice	Tyndale Vets Ltd



Veterinary surgeon	Ian Bates
XLVets practice	Fenwold Veterinary Practice

Life cycle

Liver fluke infection, caused by Fasciola hepatica, is becoming more common across the UK, with the highest rates of infection seen in the South West, West Wales and South West Scotland. Flukicide resistance (to triclabendazole) has been confirmed in sheep in the last few years and given our understanding of resistance to wormers, this would suggest that resistant fluke are here to stay.

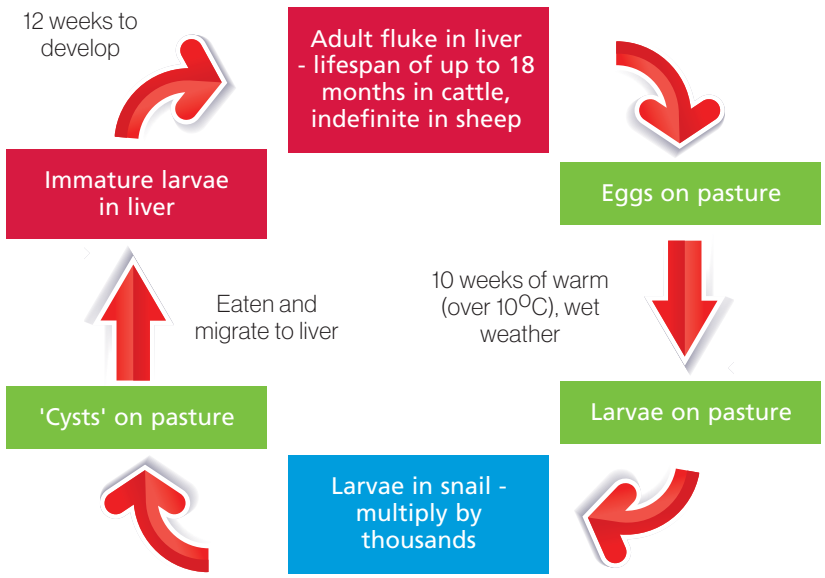
Understanding fluke infection requires an understanding of the life cycle. Liver fluke do not pass directly from cow to cow or sheep to sheep, instead they have to go via snails, as shown below.

Therefore, infection is typically seen in the autumn and winter, after the eggs have had time to hatch and the larvae develop in snails. The multiplication phase in snails is temperature dependent (80 days at 15°C but only 20 days at 30°C), so the weather will affect infection levels.

Russell Fuller
Tyndale Vets Ltd

Ian Bates
Fenwold Veterinary Practice

Liver fluke



Testing

Before embarking on a liver fluke treatment regime it is important to determine whether a fluke problem actually exists on your farm. Treating unnecessarily costs you money and time, and promotes resistance. Testing for liver fluke can be done in the following ways:

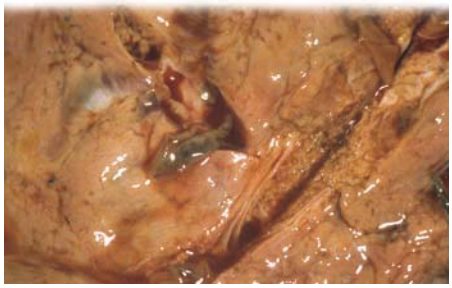
Faeces test for eggs (FEC's):

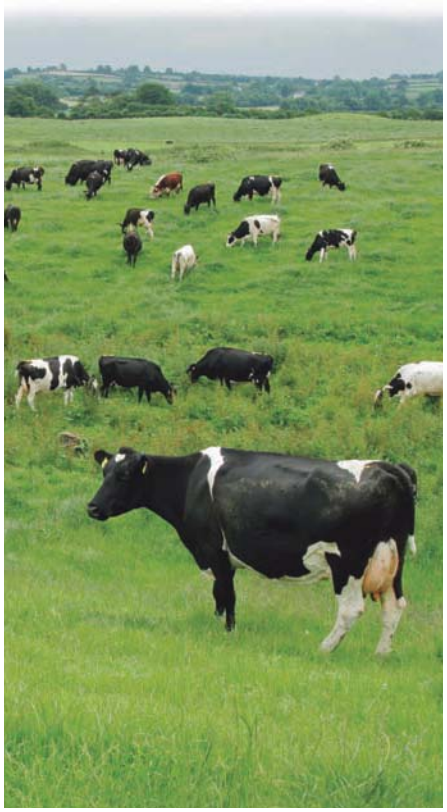
- Eggs are only produced by adults, so any test will be negative for the first twelve weeks of infection
- Proves current infection

Slaughterhouse information

- Most abattoirs will report when livers are condemned due to fluke damage

Using these tests makes it possible to build a strong picture of the overall parasite burden on farm, not just fluke.





Farm plan

Once fluke is confirmed, the farm will need its own individual plan drawn up, as conditions and risks will vary considerably. Two principles need to be followed - reducing infection, and appropriate monitoring and medicine use.

Reducing infection

The fluke that infects cattle and sheep is capable of infecting any mammal - e.g. rabbits, deer - making infection impossible to eliminate. This means that grazing areas with snail habitats will remain permanently infected, even if left un-stocked for several years. Whilst strategic treatment using flukicides will help control the problem, long term there will need to be a move towards preventing infection and reducing our reliance on medicines, as is happening with gut worms.

Therefore limiting new infections relies on preventing access of the grazing animals to snail habitats, or removing snail habitats from the farm.

Possibilities include:

- **Not grazing known 'fluke' fields** - a possibility if only some fields have a known fluke problem, assuming there is sufficient other grazing, and the 'fluke' fields can be used for silaging etc.
- **Strategic grazing** - it may be possible to limit grazing of 'fluke' areas in the autumn, limiting the number of new flukes entering the animals.
- **Fencing 'fluke' areas** - this will prevent new fluke infections but some farms may need to run an alternative water source to certain fields.
- **Long term drainage of fields** - removal of the damp areas will remove the snail habitat and therefore the fluke risk.

Each option has limitations. For example, some wet, rushy fields are only appropriate for grazing stock; the ground is too poor for good silage making or too wet to take the machinery. In other cases, the river, which is the source of infection, is also the water source for the livestock and spending all winter defrosting water troughs is impractical.

However, farmers need to consider what is possible on their farm.

Monitoring and medicines use

- Treatment frequency during the grazing season will depend on environmental conditions e.g. wet summers provide greater habitats for the intermediate host snail and encourage proliferation of both the snail and fluke. NADIS provide regional forecast summaries which can help to decide treatment protocols.
- Treat with the right product at the right time of year e.g. use a product that kills immature stages in October, and one that kills mature stages in January. Rotate flukicides on a yearly basis to reduce resistance.
- Perform regular FECs - however, egg shedding is intermittent, and none are produced until adult fluke are present 12 weeks after infection.
- Investigate all case of ill thrift - remember plenty of other causes exist e.g. trace element deficiency, dental disease, lameness, chronic conditions such as Johne's and Scrapie etc.
- Investigate sudden deaths - clostridial disease commonly causes sudden deaths secondary to liver tissue damage caused by an underlying fluke problem.

- Quarantine bought in stock and use a flukicide to avoid introducing fluke in animals carrying the parasite. As levels of resistance to the fluke medications rise, it may become prudent to dose using two different fluke medicines at quarantine.
- Resistance, (especially to triclabendazole), is increasing so any perceived treatment failures should be thoroughly investigated.

Using flukicides correctly

It is important that both drug and non-drug control measures are used together, rather than relying on medicines alone.

To treat liver fluke, you need to strategically treat with a flukicide product tailored to the stage of the fluke lifecycle. The stage of the fluke lifecycle is determined by the time of year and local farm factors such as climate, grazing management, stocking density, ground conditions etc. As a result the dosing regime must be tailored to the individual farm. There is no such thing as a 'routine' or 'blanket' control programme. A Fluke control programme should be incorporated into the individual farm's health plan.

As with all medicines it is important to store and use them appropriately. For example many data sheets read 'store in a dark place below 25°C'. Whilst data sheets may not represent the most stimulating read and can induce a state of stupor, their content is vitally important as failure to abide by these guidelines may result in reduced drug efficacy. The car or truck dashboard or passenger seat is not a suitable drug cabinet!

Ensure all drenching equipment is clean and correctly calibrated before use, and DO NOT mix products in the same drench. Accurate dosing according to weight is very important as under dosing is a strong driver for resistance, whilst overdosing risks toxicity. As a rule of thumb, treat according to the heaviest in the group. If wide weight variation exists split the group into two, allowing for smaller and more even groups and then dose to the heaviest in each group.

Available flukicides

Only a limited number of products are available, and a key point is that not all will kill all the different stages of the fluke life cycle, and there is even variation in susceptibility within the ages of the individual stages of the life cycle e.g. triclabendazole has activity against the mature and immature fluke down to two weeks in cattle, whereas Nitroxnil injection only has activity down to 6 weeks, (so fluke less than six weeks old will not be killed by Nitroxinil). Albendazole only kills adult fluke. Also, there is variation between the different methods of application e.g. oral preparations kill younger stages than pour-on preparations.

These points are important, as most of the liver damage is caused by the migrating immature fluke. Also, the inability to kill the earlier stages means that repeat treatments may be needed approximately 8-10 weeks later - those fluke in the earlier stages will then be within the age of the'killing zone' and any adult flukes developed since the last treatment can be killed before they start producing large numbers of eggs.

No flukicide has any kind of persistent action - so re-infection can occur immediately after treatment.

Treatment for an acute outbreak of disease should include the use of a product containing triclabendazole as this kills all stages of the parasite. However, due to increasing concerns over resistance, it may be prudent to use another product e.g. closantel, which will remove any late immature or adult flukes present which have escaped the effects of triclabendazole. No other flukicide is available that offers the wide spectrum of activity of triclabendazole.

In summary

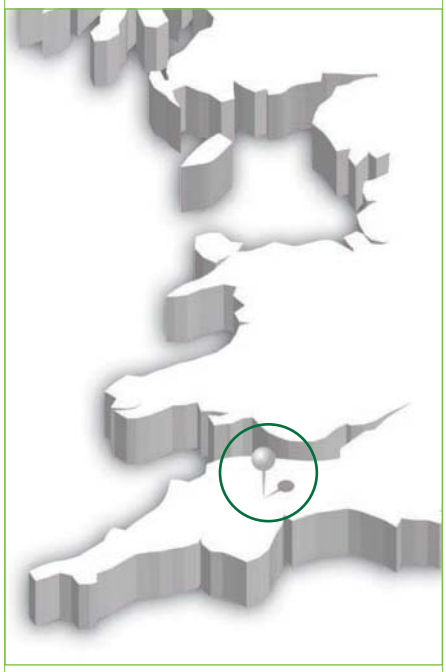
The whole-farm approach to prevention and appropriate treatment will become increasingly important. Our reliance on flukicides will need to be reduced, either due to legislation limiting the flukicides available, or the ever present threat of resistance. Planning now for the future is important as many of the prevention strategies require considerable investment of time and money, and some farmers may find that the requirements of their agri-environmental scheme do not match their fluke control requirements.

However, there is some good news. Trials for a vaccine are currently underway and in the future, we may have a vaccine available for fluke control.

For further information and advice on the treatment and control of liver fluke contact your XLVets practice.

Mastitis

St Boniface Veterinary Clinic



Veterinary surgeon	Ruth Wotton
XLVets practice	St Boniface Veterinary Clinic

Targeting environmental mastitis pathogens

Two years ago, Devon dairy farmer Paul Warren of Gays Farm near Crediton was getting a high incidence of mastitis cases in early lactation cows, an indication of infections picked up in the dry period. Cows were calved down between September and mid-February.

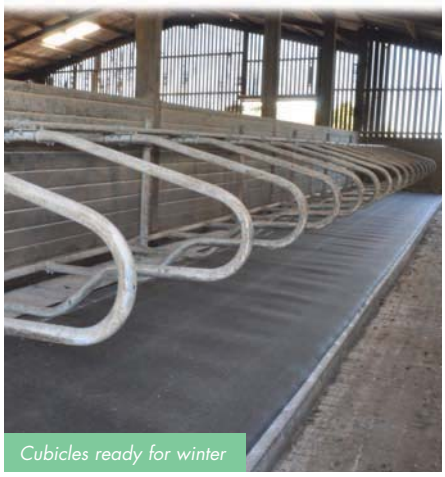
Ruth Wotton
St Boniface

Paul adds: 'Cell counts were also consistently higher than usual - over the 200,000 cells/ml mark. So I was losing out on bonus payments as well.'

Ruth used DairyCo's mastitis plan to carry out an audit of the farm: 'It's 33 pages of questions - but it makes you look at every aspect of anything that could impact on mastitis - cubicles, feed space, milking routine, milking cow and dry cow treatments…'

As part of the investigation, Ruth looked at the trends in cell counts and clinical cases, using TotalVet, a software programme linked to Paul's milk records. She says: 'There were fewer cases in September to November when the dry cows were out at grass. It was only when they came into the sheds that mastitis cases increased. So having identified the risk period, we could then look to see where and how to make changes.'

Although Paul had been drying the cows off with an antibiotic which gave 28 days protection and had prolonged action against E.coli, this was not enough. During the winter, the dry cows were densely stocked in straw yards - and the bacterial challenge was proving too much.



Cubicles ready for winter

Ruth Wotton and Paul Warren

Some changes to housing management were required. Paul explains: 'In the dry cow shed, we started to apply hydrated lime onto the straw to help kill bacteria. And we now clear all the straw out half-way through the winter. Also, the mats in the milking cows' cubicles are spread with sawdust into which hydrated lime has been added. These mats are cleaned off twice each day, and fresh sawdust applied.'

A major change has been the application of a teat sealant at drying off. Paul had not been a believer in the benefits of the concept but was persuaded by Ruth to give it a try. For the first season he just used it on those cows which would be calving down later - indoors. It resulted in significantly lower levels of mastitis, and he now uses it on all cows.

Ruth and Paul also took up a proactive approach to getting cows back into calf so that they could calve down in the period between September and mid-December. This involves treating non-cycling cows, plus the introduction of a heat detection system (transponders on collars), for which Ruth helped Paul get funding.

Thanks to improvements in fertility, more cows are now calving whilst still outdoors, thereby avoiding the challenge from environmental bacteria in bedding materials.

Key changes at Gays Farm

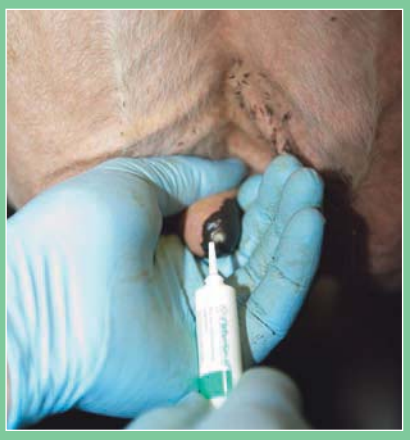
- Reduced disease pressures from straw yard
- Calving pattern tighter so dry cows calve outdoors
- Use of a teat sealant
- New-born calves prevented from cross-suckling

Ruth explains: 'Having good milk records always makes it easier to identify the problem and target it.

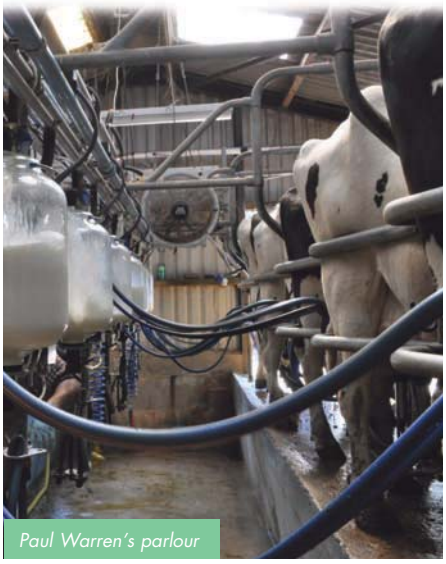
'The dry period is often a key focus area. Fortunately, relatively simple changes can make a big difference - it's not necessary to put up a new dry cow shed! Instead, look for the quick wins - look at the facilities - perhaps find another shed for the cows to reduce stocking pressure, use a teat sealant, and improve bedding hygiene.'

Paul has been able to cull out some older high cell count cows and now rolling cell counts are around 100,000 cells/ml. The mastitis incidence in freshly calved cows is now down to around 1.5 cases per 12 cows.

Smooth teat end



Applying teat sealant



Paul Warren's parlour

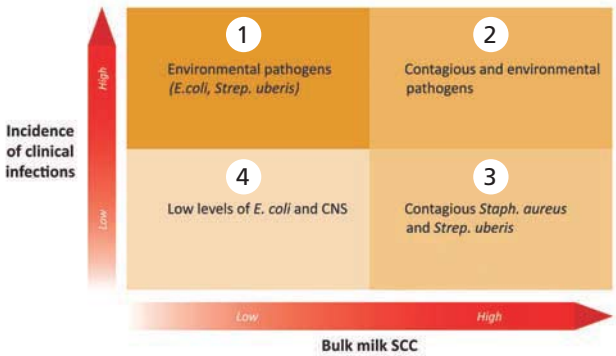
Ruth's top tip!

When there's a rise in mastitis cases or cell counts, don't get fixated on the fact that it's the make or type of antibiotic that's at fault. It's just one of many factors that impact on mastitis infection rates, and is often not the cause of the problem.

Establishing the causes of mastitis to bring levels under control

Judith Roberts
Zoetis UK Ltd

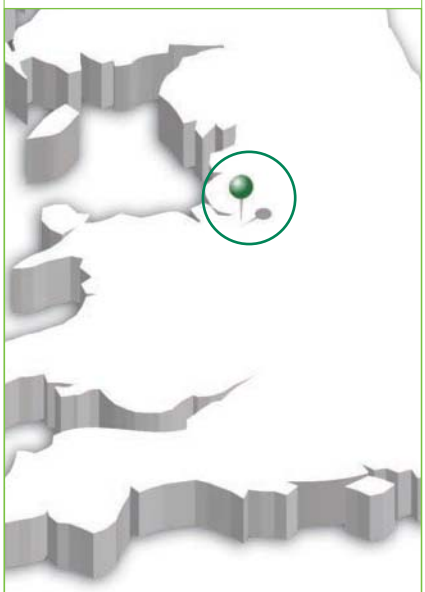
At the Robot Workshop held last April (see Livestock Matters' summer issue), Zoetis' Judith Roberts presented the diagram below and told delegates that for the best success in controlling mastitis, it is important to identify which types of bacteria are causing the infections so that remedial actions can be targeted and effective. Knowledge of the incidence of clinical mastitis infections in the herd, together with bulk milk somatic cell counts, also help guide investigations.



For herds with a high incidence of clinical infections but relatively low cell counts, environmental pathogens are the likely cause of mastitis cases [Box 1]. For herds in Box 3, contagious pathogens are probably causing the high cell counts, so control measures should be targeted at the milking parlour and infected animals. For herds which fall into Box 2, decide where the priorities lie, before starting to make changes. This characterisation provides a guide to diagnosis. However, to determine exactly the type of mastitis pathogens prevalent in a herd, it is recommended that milk samples from clinical mastitis and high cell count cows are taken and sent for bacteriological analysis.

An environmental challenge turns contagious

WILLOWS FARM ANIMAL VETERINARY PRACTICE



Veterinary surgeon	Ben Pedley
XLVets practice	Willows Farm Animal Veterinary Practice

Ben Pedley
Willows Farm Animal Veterinary Practice

Richard Brooks
Farmer, Hill Top Farm

Dropline with specialist sprayer

Last summer, the wet weather over-challenged the mastitis defences for Jenny and Richard Brooks of Hill Top Farm near Winsford in Cheshire. Cell counts rose to over 300,000 cells/ml, and aroused concern from their milk buyer.

Their vet, Ben Pedley from The Willows Vet Group in Northwich, was called in to help them establish the root cause and get the matter under control.

Ben said: 'Immediately after my visit, I rang the milk procurement manager at the dairy and explained that we were aware there was a problem and we were doing something about it. In such situations, I always do this. It reassures milk buyers, who are usually keen to co-operate.'

Ben identified the main culprit as Streptococcus uberis. He explains: 'This is often classified as an environmental pathogen. However, once an udder has become infected, it then becomes a contagious mastitis problem, and the infection can spread from cow to cow in the milking parlour.'

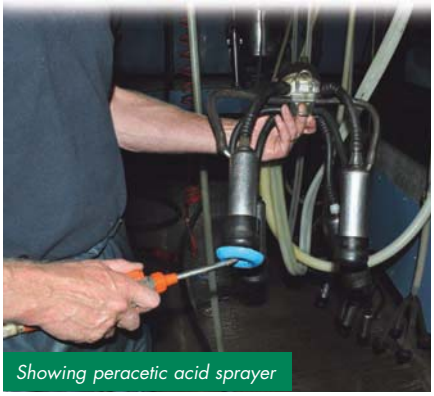
Changes to the milking routine were needed, and chronic high cell count cows were identified with a view to being culled.

Ben identified three priorities - the first was to get the bulk milk cell count down as quickly as possible to protect the milk cheque.

This was a balancing act, as Richard explains: 'In a herd of 90 milking cows, culling a few animals has a significant impact on our milk volume. So we identified the problem cows from our milk recordings, and took the approach of temporarily dumping it.'

Then Jenny used a testing kit to monitor cell count levels in the cows, and once they dropped, their milk went back into the tank.

Ben's second priority was to treat the cows that were 'worth it'. He explains: 'Research has shown that the success rate of treating a chronically infected cow if she is in her fourth lactation or more, is less than 5%.'



Showing peracetic acid sprayer

Ben Pedley, Richard and Jenny Brooks

Parlour routine

Ben explains: 'The third priority was to prevent the remaining cows from getting worse. Changes to the parlour were needed.'

The major change was to introduce the flushing of units with peracetic acid in-between cows. A commonly used option is to dump the whole cluster in a bucket of peracetic acid, but on Ben's advice the Brooks immediately contacted their dairy engineers who installed four droplines in the parlour with a jetter specifically made to tolerate the acid. This provides fresh solution 'on-tap' in the pit.

Now, after each cow is milked, clusters are flushed with peracetic acid and those milking the cows rinse their gloved-hands with the jets too.

Ben adds: 'Wearing gloves when milking is essential; hands harbour bacteria, whereas gloves stay cleaner more easily and can be washed with disinfectant between cows.'

The high cell count cows have been tail-taped and are milked last into a dump bucket.

Ben adds: 'It can take up to a month for cell counts to drop even when a cow has been treated successfully. Richard and Jen acted very promptly once we'd established the best way of resolving the situation, and soon had the droplines installed in order to reduce cross-infection.'

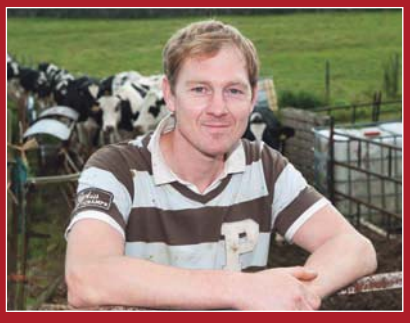
By December, the cell counts were under control, at around 100,000 cells/ml.

Adapting the parlour routine ensures mastitis rates stay low

KINGSWAY Veterinary Group

Veterinary surgeon	Jonathan Stockton
XLVets practice	Kingsway Vet Practice

Jonathan Stockton Kingsway Vet Practice



Adrian Beresford High Ground Farm

Yorkshire farmer Adrian Beresford of High Ground Farm near Skipton, and his vet Jonathan Stockton of Kingsway Vet Practice, have worked together for many years. Over time, they have gradually been able to reduce the numbers of mastitis cases and cell count levels, by adapting milking parlour routines.

Their team efforts have paid off along the way. Over the past eight years, Adrian has regularly been amongst the finalists in milk quality awards organised by his milk buyer.

Adrian currently runs a herd of 130 milking cows with an average yield of 10,000 litres/cow. Cell counts tend to range between 80,000 and 100,000 cells/ml, with all milk going into the tank.

Jonathan says: 'Adrian and his fellow milkers at High Ground Farm are good at paying attention to detail, and are careful to follow a routine procedure in the parlour.'

But there have been 'blips' of high cell count cases from time to time, and Adrian and Jonathan have had to track down the cause and make changes to bring levels back down.

Adrian Beresford's cattle

Milking routine changes

Ten years ago, Adrian took advantage of the availability of the first teat sealant. It reduced the mastitis cases in newly calved cows and was a relatively simple step forward in controlling cell count levels.

About eight years ago, mastitis cases from contagious bacteria were causing a rise in cell counts. Jonathan explains: 'Mastitis caused by Staphylococcus aureus is hard to cure. So Adrian was advised to dry some infected cows off early and cull some of them.'

Adrian explains: 'Following discussions with Jonathan, to help reduce the spread of the bacteria we identified the high cell count cows with yellow tape on their tails. We then disinfected the clusters with peracetic acid after milking them, adapting a teat sprayer to do this.

'Also, if a cow had three cases of clinical mastitis in the same quarter in the same lactation, then the teat was identified with blue tape and its quarter then dried off.

'Having culled out some of the cows, and then disinfecting between clusters, we significantly reduced the numbers of persistent offenders,' says Adrian.

Examining a teat end

Altering milking machine set-up

In August 2012, there was a sharp rise in clinical cases. Adrian raised the issue with Jonathan on one of his fortnightly fertility visits.

An investigation followed; bacteriology tests revealed the pathogens behind the mastitis were those found in the environment - E.coli, and Strep. uberis.

Adrian also mentioned to Jonathan that for a long time he had wondered why his cows had 'warty' teat ends, which were apparent as the clusters came off.

Hyperkeratinisation

Jonathan explains: 'This is due to a build-up of keratin around the tip of the teat - called hyperkeratosis. It's caused by the milking process - it can affect teat closure and also creates an environment in which bacteria can inhabit. This makes the cow more susceptible to mastitis infection from environmental pathogens, and in turn can lead to higher cell counts.'

So the first step was to assess the scale of the problem: one of Jonathan's Kingsway colleagues visited during a milking and carried out some teat-end scoring. As each cluster came off, the ends of the teats were scored for how smooth or rough they were on a scale of 1 to 4.

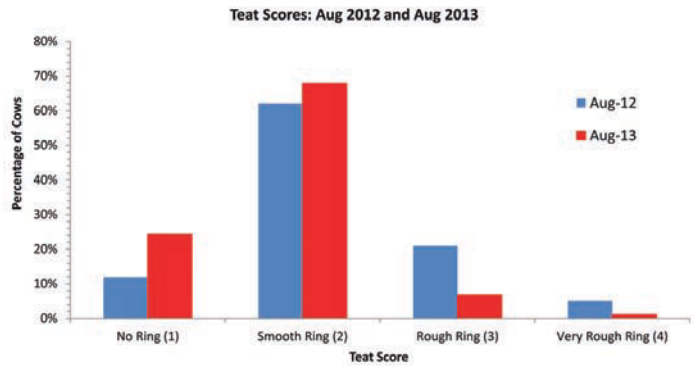
The scores highlighted there was a significant problem of hyperkeratosis, as cows were being over-milked. Alterations to the milking machine set-up were needed. So Adrian called in his dairy engineer.

Previously, the milk flow threshold for cut-off was 200ml/min - this has been increased to 400ml/min. And the take-off time has been reduced so clusters come off quicker once milk-out has ceased. To help the cows adjust to the different timings, these changes were made gradually, with the engineer visiting three times over a 10-week period.

Jonathan explains: 'With a flow rate setting of 400ml/min, the cows are being milked for a shorter time - but it doesn't mean yield is being lost. It does mean there's less pulling on the teat, less damage, and ultimately less opportunity for bacteria to invade the teat.'

'Sometimes, when parlours are upgraded the system can revert to factory settings. So it's a good idea to always check the settings after any alterations are made.'

Teat Scores for Adrian Beresford



The new settings have made a dramatic difference to teat condition, with very few 'warty' teats occurring now (see graph). The percentage of teats which are in good condition - a score of 1 or 2 - has risen from 74% to 92%.

At the same time, Adrian also changed his procedures for teat preparation. He had been using an iodine-based spray for pre and post-milking. But then switched to a foam dip pre-milking, followed by a barrier dip with a high level of emollients, for post-milking.

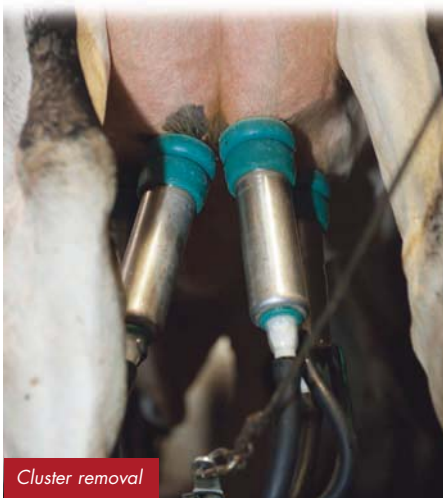
Adrian adds: 'The foam dip is more expensive than spraying, and not as quick, but it contains ingredients beneficial for teat repair.'

Jonathan adds: 'Not only does teat condition have an impact on milk hygiene, but it also reduces milking time as teats are easier to prepare, and cows are more comfortable.'

With the progress made this year in reducing cell counts, Adrian has now stopped disinfecting clusters in-between cows: 'We have saved a bit of time in doing this, but obviously the dipping takes longer so at the end of the day, we are about evens.'

He adds: 'For several years now, cows with higher cell counts have been milked last. This all helps reduce the risk of cross-contamination in the parlour.'

Foam dip



Cluster removal

Better and better

Adrian sums it up: 'We used to get around 100 mastitis cases per 100 cows per year. By culling out the high cell count cows and using a teat sealant, it reduced to around 60 cases. By introducing peracetic acid, cases dropped to 45 per 100 cows per year.

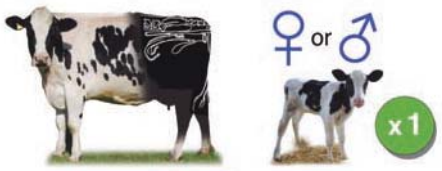
'In the past 6 months, thanks to alterations to the milking machine set-up, and perhaps the introduction of the foam dip, we are now running at around 35 cases of mastitis per 100 cows per year. I just wish I'd mentioned the warty teat-ends a bit sooner!'

Jonathan adds: 'I make fortnightly routine fertility visits for many of my dairy clients. But I'm not just there to PD cows. It's a great opportunity to talk about other aspects of herd health and production, some of which may not require a special call-out and can be sorted quite quickly. So my advice to any farmer who has noticed something a bit different is to just run it by your vet when he next visits, you never know how much it could save you!'

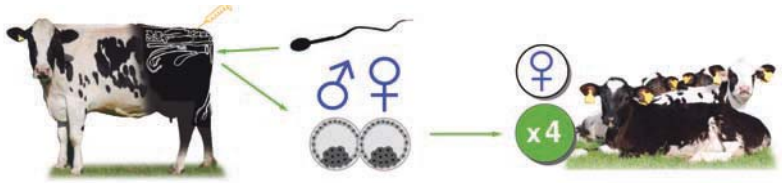
XLVets leads advanced breeding technology

What is different about IVF

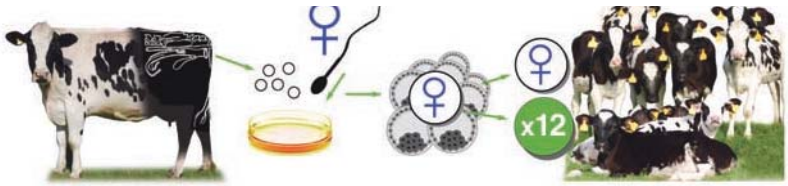
Conventional Breeding - Bull or Artificial Insemination (AI) - One calf per year



Multiple Ovulation Embryo Transfer (MOET) - Four times the genetic production rate of conventional breeding



Ovum Pickup/In-Vitro Embryo Production (OPU/IVP) - Twelve times or more the genetic production rate of conventional breeding



What does the process involve?

In-Vitro Fertilisation (IVF) is the process of creating embryos from unfertilised egg cells called oocytes. The oocytes are gently aspirated (sucked) from the ovarian follicles by means of a fine needle and guided by an ultrasound scanner probe placed in the vagina. This is called Ovum Pickup (OPU). The recovered oocytes are then matured and fertilised in the laboratory. Further maturation and culture takes place in an incubator for approximately seven days resulting in viable embryos which can be transferred into recipient cows.

Advantages of the IVF procedure

A larger number of offspring can be generated in a shorter time frame than using conventional methods.

- The process is non-surgical and requires no treatment other than epidural anaesthesia, minimising clinical risks and pharmacological interventions.
- OPU collections can be performed weekly, so more oocytes can be collected in a shorter time period.
- Oocytes can be collected from both juvenile heifers and pregnant donors during the first trimester, extending the number of potential embryos which can be produced.
- The technique can be used on animals with a range of reproductive disorders, which might not otherwise be able to continue breeding.
- Less semen is used per fertilisation so multiple donors can be fertilised with a single straw; saving money and utilising limited semen stocks.
- A wide range of bulls can be used due to the frequency of collection giving greater scope for genetic improvement.

Stuart Mullan Veterinary Surgeon

Stuart is leading the IVF project for Paragon and is based at the Newbiggin Paragon Advanced Breeding Centre.

Jenny Turner Project Manager

Jenny Turner is the Advanced Breeding Project Manager coordinating the TSB IVF In Cattle Project on behalf of the consortium members. She is based at Paragon's Dalston centre.

IVF in cattle will soon become commercially viable for mainstream UK dairy and beef herd thanks to a project being led by XLVets member practice, Paragon Veterinary Group.

The development of IVF in cattle is being led by Stuart Mullan and colleagues at Paragon's Advanced Breeding base at Newbiggin near Penrith. The initiative is a five year grant-aided project with the Technology Strategy Board (TSB), whose goal is 'to accelerate economic growth by stimulating and supporting business-led innovation'. Paragon Veterinary Group is the lead organisation for the project, supported by three other consortium members; XLVet UK Ltd., University of Nottingham and Cogent Breeding Ltd.

'OPU was initially developed so that high genetic merit 'no-hoper' cows could be brought back into their owners' herd breeding programmes' says Stuart. He explains how it soon became clear that this technique could quickly become a mainstream component in the cattle breeder's toolbox.

Stuart reports acceptable pregnancy rates in the transfer of fresh IVF embryos to recipients. The main focus of the research team's work is now to concentrate on freezing embryos and to continue improving subsequent pregnancy rates. Another key focus of the project is to create viable IVF embryos using sexed semen to produce exclusively heifer calves. Typically, he says each OPU egg collection yields six to eight viable eggs. Extracted eggs require a 24-hour period of maturation in a culture medium before fertilisation. Resulting embryos are cultured for six days in a nutrient medium and are then ready for implantation in recipient females that have been synchronised in parallel. Stuart reckons approximately 35% of extracted eggs are likely to make viable transferable embryos.

The project is now in year two of its five year TSB programme. The main goal is to make a commercial cattle IVF service available to owners of dairy and beef herds seeking accelerated advancement in cattle genetic merit. In addition to the core scientific R&D work, investment is also planned for developing facilities and equipment, staffing and training, and ultimately sales and marketing.

Stuart says the vision is to have five OPU/IVF teams around the UK within the next five years, with an associated network of XLVets practices implanting embryos into recipients. Stuart also suggests that IVF could largely replace MOET as the first choice technique in accelerated genetic progress in cattle, and is resolute that the UK can become a global leader in this technology among a number of rival programmes in other countries.

Recipient management

This key part of the IVF process is the same as for MOET recipients and is consequently well proven and understood by specialist cattle vets. Recipient females are usually treated with a controlled intra-vaginal drug release device, which releases progesterone at a precise rate, passing through the vaginal wall into the blood stream. Progesterone suppresses the release of other reproductive hormones, thereby suspending the oestrous cycle temporarily.

After the prescribed number of days, removal of the device causes a sharp drop in blood levels of progesterone. This triggers resumption of the oestrus cycle, in preparation for transfer of embryos into recipients at the optimum time.

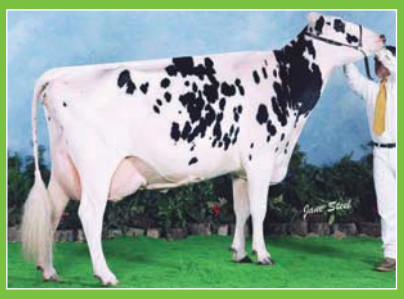
Recipients receiving IVF embryos need to be managed to an even higher standard than those receiving conventionally produced embryos to achieve maximum pregnancy rates.

Key factors in recipient management are:

- **Nutritional status** - It is very important to have recipients on a rising plane of nutrition. The diet should be based on long fibre with a moderate protein content and well supplemented with minerals and trace elements.
- **Body condition** - Recipients should be maintaining or increasing body weight, but not be over fat. Animals losing condition for whatever reason, are likely to give poor results.
- **Age of recipient** - Maiden heifers will generally give 5-10% better pregnancy rate compared to cows, however, in some situations this can be countered by the improved calving ease of cows.
- Maiden heifers should be 15 months or older, cycling and at least 350kg in weight.
- Cows should be fourth calvers or less, past peak yield and have no history of health or reproductive problems.
- **Disease status** - Infectious diseases such as BVD, IBR and Leptospirosis can have a disastrous effect on an ET programme and control measures should be discussed with your Vet.
- It is inevitable that some losses will also occur after positive pregnancy diagnosis. A resorption/abortion rate of 5% from six weeks is considered normal. Most losses occur early in pregnancy and are spontaneous, however, it is wise to investigate known abortions in case the cause is infectious.

Case study 1

"Mattia stopped producing fertile embryos three years ago. Using IVF she is now producing pregnancies again at 15 years of age"



Above: Applevue Rudy Mattia EX97(4)

Right: An IVF calf born at Riverdane

Mark Nutsford
Riverdane Herd, Cheshire

Case study 2

"Tina was a cow who had been difficult to get in calf after her first pregnancy and only ever produced 2 embryos by conventional flushing."

Recent success using the Ballycairn herd in Northern Ireland has been very encouraging, Ballycairn Goldwyn Tina VG89 (305d, 12,485kg, 5.22%F, 3.76%P, PLI £194) has now produced nine successful pregnancies from vitrified (frozen) IVF embryos, transferred by Stuart Mullan.

Activf-ET is the company that has been created to commercialise the research, and to communicate and market the technologies. Initial centres are being established in Cumbria, Cheshire and Yorkshire, for further details contact Activf-ET:

Activf ET

T: 01228 710208 **E:** info@activf-et.com
www.activf-et.com

A look behind the scenes of this year's Gold Cup winning herd

Left to right **Bill Higgins (Senior), Bill Higgins, Andrew Higgins and Margaret Higgins**

This year's winner of the NMR Gold Cup is the pedigree Holstein Wilderley herd, run by brothers Bill and Andrew Higgins, and their parents, Bill and Margaret. To win this award, requires attention to detail, careful choices in herd management and breeding, and good teamwork on the farm. Good herd health and fertility is fundamental, and XLVets' James Marsden and Roel Driesen of Shropshire Farm Vets, are part of the support team.

SHROPSHIRE FARM VETS
stand out from the herd

James Marsden
Shropshire Farm Vets

Roel Driesen
Shropshire Farm Vets

An efficient use of time

James explains: 'We know it takes exactly 17.5 minutes to drive from the practice to Wilderley Hall Farm!

'So when we have an appointment - be it routine or emergency - we always call ahead just as we leave. Then Bill or Andrew can be ready for us as soon as we get there - and no one is left waiting around.

'And if we get called out to see an individual animal, we can guarantee that the said animal is ready waiting, along with a full up-to-date case history. So as vets, we are fully supported to make the diagnosis.'

These are typical examples of how the Higgins family appreciate the value of time - theirs and other people's - and pay great attention to detail, ultimately looking to get things done in the most efficient way.

Pre-calvers

It's the same with the fortnightly routine fertility visits that James makes. Three days beforehand, the Higgins brothers employ an ultrasound scanning technician to PD the cows. As this is a non-invasive procedure, it is carried out whilst the cows are still in the cubicles, so minimising any disruption to their feeding or lying.

Then when James comes out to the farm he is presented only with cows that require veterinary examination. James explains: 'It's a good use of my time. I'm used for my expertise, and it's more efficient to just focus on the problem cows.'

Another area which has improved how time is spent is the introduction of a series of protocols for things like mastitis cases and post-calving management. Roel has drawn up decision-making flow charts which guide the farm's staff through the procedures to follow. Roel adds: 'It's given the workforce more confidence in knowing what they can do for themselves and when they ought to call Bill or Andrew, or the vet.'

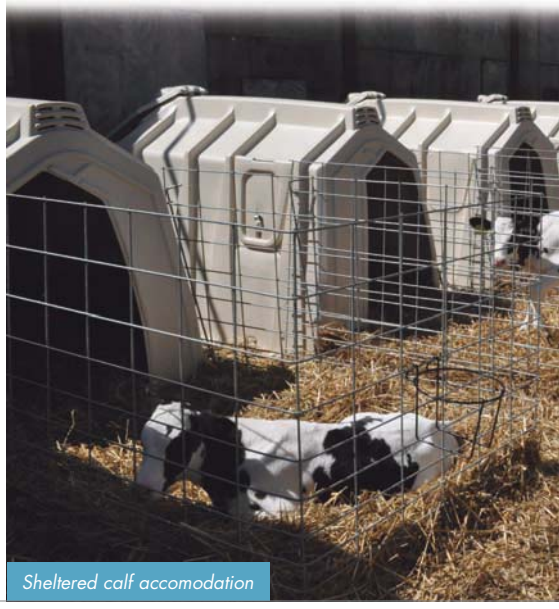
Disease prevention

The herd is vaccinated for BVD and IBR, monitored for Leptospirosis and Johne's disease, and also PCR-tested for BVD. Routine foot trimming is carried out at set stages of each cow's lactation.

Calves are protected from scours by vaccinating their dams in the 3-5 week period before calving, so that immunity can be built up via the colostrum.

Calf management is excellent: 94% of live-born heifer calves will successfully calve into the herd.

In an XLVets national survey earlier this year, which screened herds for exposure to the Schmallenberg virus, the Wilderley herd tested negative. James attributes this to the deliberate and routine use of fly repellents and the fact that the farm is in a windy, midge-unfriendly, location!



Sheltered calf accomodation

Cutting back on antibiotics

The Higgins brothers are proactive in researching into ways to reduce their use of antibiotic treatments. Bill adds: 'It's important to set an example; we are accountable to the consumer. Through our work with Tesco's 'Sustainable Dairy Group' we are focused on reducing the use of third and fourth generation cephalosporins and fluoroquinolones, and making responsible choices in our use of antibiotics.'

In the past, to ensure good mastitis cure rates, a 'belts and braces' approach had been taken, ensuring cows had plenty of fluids, and administering an NSAID, and also oxytocin to help flush out the bacteria. The mastitis was treated with both an intramammary antibiotic tube and a systemic antibiotic injection - the latter often being a fluoroquinolone.

Roel explains: 'I'd seen some good evidence which suggested that the systemic antibiotic treatment was not necessary for the majority of cases encountered, and suggested cutting it out.'

Although initially quite wary, the Higgins brothers spoke to some fellow dairy farmers whose experiences backed up what Roel had advised. Systemic therapy has now ceased for mild and moderate cases, without any adverse effects on cure rates.

Since the beginning of this year, there has also been a dramatic reduction in the use of dry cow tubes at Wilderley. Originally, cows were routinely dried off using a dry cow tube and a teat sealant.

James explains: 'It's now generally accepted that a teat sealant can be used alone on cows where cell counts have been less than 200,000 cells/ml, for the previous three months with no cases of mastitis. Andrew started with caution - only adopting this approach for cows which have had no mastitis in the past six months, plus a cell count of less than 150,000 cells/ml.'

Andrew adds: 'It was a high risk strategy for us, so we took a softly, softly approach. I was only treating one dry cow in every eligible four, just to see how it went. But now we are following this tack with the majority of cows that meet the criteria.'

Gold Cup-winning statistics (year ending Sept 2012)

Milk yield/cow	12,718kg
Butterfat	3.81%
Protein	3.03%
Average SCC	68,000 cells/ml

More farm facts

SCC (July 2013)	92,000 cells/ml
Voluntary waiting period	70 days
Services/ pregnancy	2.25
Pregnancy rate	24%
Calving interval	416 days
Average age at 1st calving	24.2 months
Lifetime Daily Yield	18.31 kg/d

The first 10 days of lactation

Post-calving management is especially important in very high yielding cows. And at Wilderley, it is a key focus area.

Andrew explains: 'As soon as possible after calving, the cow and her calf are isolated from the rest of the group, so she can concentrate on eating and drinking, rather than defending her calf. She is given 40 litres of tepid water and some of the milking cow ration. If she is not eating and drinking, we will use a stomach pump to re-hydrate her.

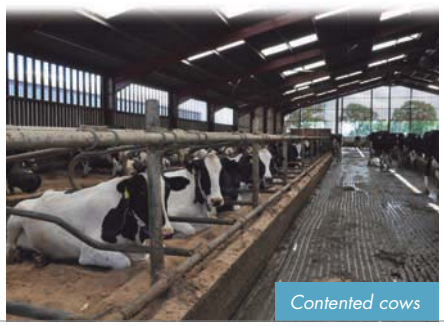
Bill adds: 'By separating the cow into a pen, her eating and drinking can be monitored.

In our experience, dehydration is the number one cause of milk fever, DAs and loss of appetite.'

The cow will stay in the post-calving group shed for 7-10 days. Andrew explains: 'Her rectal temperature is checked and recorded, and she is examined for metritis. Blood ketones are also monitored - if levels are high, this indicates insufficient energy intakes and we have a protocol to rectify the situation. We also monitor dung consistency, rumen fill, milk yield and general demeanour.'

In addition to the milking ration, cows in the first 7-10 days of their lactation get an additional 1.5kg of wheat straw, 0.5kg soyabean meal and 100g of milking cow minerals.

Thanks to excellent ration formulation (by Richard Vecqueray of EBVC), excellent fertility performance, and careful post-calving management, the incidence of DAs in the herd is less than 2%.



Contented cows

Staff communication

With a variety of staff, including part-time night workers, it is essential that any observations - seemingly minor at the time - are relayed back to Bill and Andrew.

So there are two diaries kept in the dairy office: an A4 week on 2 pages - so if a cow is seen bulling or is suspected, then it can be recorded, and Andrew then takes responsibility to investigate further. In another diary - one A4 page per day- more detailed notes are made of activities that have been carried out, e.g. antibiotic treatments. There are also two white boards in the parlour on which notes can be left.

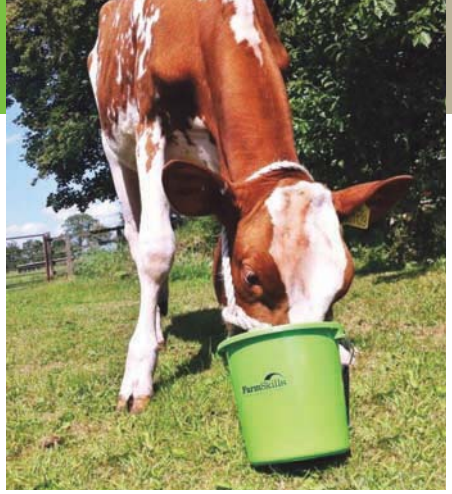
Professional teamwork

Andrew comments: 'At the heart of our relationship with Roel and James is the fact we are all professionals, and treat each other as such.'

Bill adds: 'If James or Roel has a suggestion for change - it is backed up with evidence. They are happy for us to challenge them, and to discuss matters further. This helps to ensure we can make informed decisions for our business.'

James adds: 'It's great to see that all the hard work and dedication the Higgins family and their staff have put into the herd, has now been acknowledged with the award. In the dairy world, it's almost akin to winning the FIFA World Cup!'

FarmSkills
GROWING FARM BUSINESS SUCCESS



Zoetis calf rearing workshops

Successful calf production begins long before the birth of the heifer calf. Even before conception there are many things to consider in order to maximise your chance of making her life a success.

The health and nutrition of the dam is a key factor in this, ensuring that she has an appropriate body condition and is adequately supplied with all the trace elements and mineral she requires to carry a healthy calf.

Other factors to consider include the suitability of the calving environment available along with the steps taken during the first critical hours of a calf's life, which not only influence the chances of survival but may also determine how quickly she grows, at what age she gets in calf and how much milk she produces during her life.

With this in mind FarmSkills have teamed up with Zoetis to run a series of 'Calf Rearing - Birth to Weaning' workshops to equip delegates with the confidence, knowledge and practical skills to improve their calf production.

zoetis

By the end of the workshop attendees will be able to; plan and prepare for a successful calving period, conduct basic first aid to resuscitate the newly born calf, provide appropriate management to maximise survival rates and outline the key steps required to produce a healthy well-grown calf which is in optimum condition to be weaned.

Focusing on the importance of early nutrition, immunity and weaning, the workshops will be delivered on farm by both an XLVet and a Zoetis vet.

What do these workshops cover?

- The calving environment and a practical assessment of facilities
- Colostrum management
- Environmental management
- Milk feeding/rumen development/ calf rationing
- Importance of immunity and how to maximise it
- Weaning strategies and targets

The workshops are accompanied by our fantastic new FarmSkills fact and workbooks which are designed for delegates to keep on farm and refer back to when necessary. They provide practical advice, tips and check lists covering all aspects of the course.

We are running over 20 workshops around the country over the coming months, priced at around £50 for the day. For further information and to book online visit our fantastic new website www.farmskills.co.uk or call the FarmSkills team on 01765 608489.

If you have already attended a 'Calf Rearing Birth to Weaning' workshop, why not book on to attend 'Calf Rearing Stage Two - Weaning to First Calving workshop'? To register your interest complete an online enquiry form or contact the FarmSkills team.

"The workshop provided concise and useful information to take back and implement on my own farm. Both vets were very knowledgeable and enthusiastic and the location was perfect for the day,"

"I now have plans to improve the ventilation in my calf sheds at home as well as to regularly monitor progress. The course has given me practical advice and tips that are easily followed to improve production."

Calf Rearing Delegates - Rosevean Vets workshop

FarmSkills

GROWING FARM BUSINESS SUCCESS

xLvets
Excellence in Practice

FarmSkills workshops coming up

FarmSkills workshops are open to farmers from across the country and on any livestock subject - so whether its DIY AI in Dorset or lambing in Leicester, please contact us to find out more.

FarmSkills: positive benefits from practical courses...

DIY AI

28-31 October	East Sussex
5-8 November	Gloucestershire
5-8 November	Norfolk
4-7 March 2014	Devon

Safe and Effective use of Veterinary Medicines

30 October	Aberdeenshire
31 October	Oxfordshire
14 November	Devon

Practical Lambing

12 December	Gloucestershire
15 January 2014	Norfolk
30 January 2014	Cheshire
7 February 2014	Devon
17 February 2014	Dorset
20 February 2014	Oxfordshire

Foot Trimming

23 October	Derbyshire
30 October	Staffordshire
November	Hexham
27-28 November	Norfolk
2-4 December	Leicestershire
10-11 December	Devon
22 January 2014	Lancashire

XLVet Training Services Ltd, Mill Farm, Studley Road, Ripon HG4 2QR

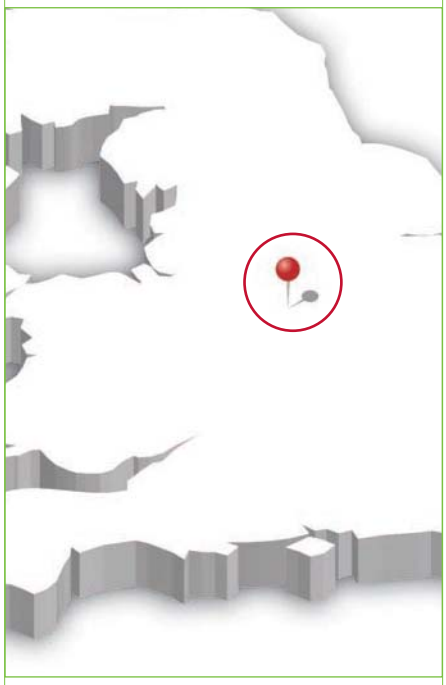
Please note dates are subject to change

www.farm-skills.co.uk

Text **07854 063384** Telephone **01765 608489** E-mail **farmskills@xlvets.co.uk**

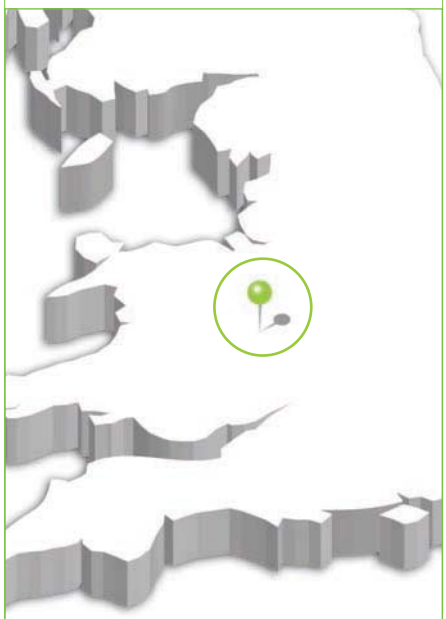
Many FarmSkills workshops are funded by LandSkills, which is managed by Lantra, in the North East, Yorkshire and Humber, East and West Midlands as part of the Rural Development Programme for England. The FarmSkills workshops in Cheshire are funded through the RDPE Skills Programme for Cheshire, which is managed by the Reaseheath Enterprise Delivery Hub. FarmSkills workshops in the South West are supported by the Duchy College's Rural Business School's Healthy Livestock and Skills projects as part of the Rural Development Programme for England, funded by DEFRA and the European Union.

ScarsdaleVets Farm



Veterinary surgeon	Rose Jackson
XLVets practice	Scarsdale Veterinary Group

SHROPSHIRE FARM VETS
stand out from the herd



Veterinary surgeon	James Marsden
XLVets practice	Shropshire Farm Vets

ROSE JACKSON, SCARSDALE VETERINARY GROUP
JAMES MARSDEN, SHROPSHIRE FARM VETS

Raising the bar on heat detection

XLVets Rose Jackson from the Scarsdale Veterinary Group, Derby and James Marsden, Shropshire Farm Vets, Shrewsbury comment on techniques to improve heat detection rates. Shropshire producer Tim Downes shows us what can be done on farm.

Rose Jackson
Scarsdale Veterinary Group

James Marsden
Shropshire Farm Vets

When it comes to getting cows in calf, heat detection is only half the story. But, producers do have control of this. Improving submission rates will help improve 100 day in calf rates and reverse the downward trend in overall pregnancy rates - all factors that contribute to herd profitability.

'As vets, we aim to set our producer clients a target of 50% heat detection rates,' says Rose Jackson. 'However, according to recent NMR data, only average rates of 30% are being achieved.'

A few factors go towards explaining why this is happening - reduced skilled farm staffing rates, cow genetics and lameness. 'The stress of lameness can actually affect ovulation as well as reduce the intensity of oestrus - a lame cow will take an extra 40 days to get in calf. Only 50% of Holstein cows will show true standing heat and so stock people need to be even more vigilant when looking for bulling cows in these herds.'

There are several ways to improve heat detection on farm. The simplest system, if you have the manpower, is to observe the cows for signs of heat, four times a day for 30 minutes at a time. It is important that these observation times do not coincide with milking time or feeding and that one of the observations is after 10pm at night.

'In reality, most farms are too busy to achieve this nowadays,' adds Rose. 'So they need to rely on additional methods. Heat detection aids vary in simplicity and cost. At one end of the scale are 'cheap and cheerful' heat detection stickers but these still rely on a skilled stockperson to look out for any changes and they can be falsely activated.'

The development of new technology; pedometers and progressing to activity meters with electronic collars linked up to wireless system, are showing that new levels of heat detection can be achieved. 'Some of these devices are taking heat detection to new, and very welcome levels.

'It may mean a significant investment, although some grants are available, but once set up and running it shouldn't take long to see the cost-benefit on many units with better submission rates, better pregnancy rates and an improved calving interval. And as well as detecting bulling cows, they can also be helpful in identifying sick cows; those with reduced activity could be cause for concern.

'In an ideal world, I would recommend using an automated activity meter system plus a manual observation after 10pm,' says Rose.

Tim's cows have Silent Herdsman collars that pick up activity 24/7 and relay information to the computer via a wireless system

One producer who has embraced the technology and improved fertility, mainly through more accurate heat detection, is Shropshire producer Tim Downes. He's recently shifted the calving pattern of his 250 cross bred organic herd from two blocks to one spring 12-week period.

'This is really a lifestyle choice,' says Tim who farms with his father and wife Louise 'It suits our farm and growing season too. But the success of our system relies on getting cows in calf, and picking up heats is vital. We can't really catch up if we miss serving cows.'

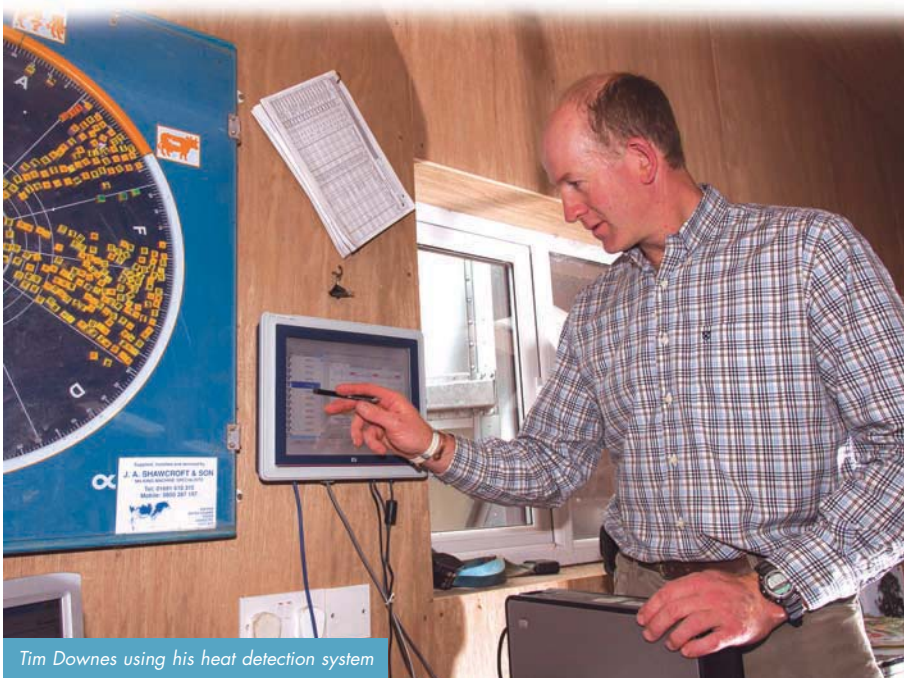
This was the reasoning behind Tim's initial interest in the electronic heat detection system Silent Herdsman. 'We took the plunge and bought it two years ago. All cows were fitted with the collar with its transponder that downloads movement information wirelessly to the PC monitor.'

Improvements in submission and pregnancy rates have been monitored. 'We serve cows from May 1 to the end of July and by early August this year we'd PD'ed two thirds of cows and 85.5% of them were in calf,' adds Tim.

Overall fertility is improving as planned at The Farm at Longnor with the calving to first service interval at 68 days, an improvement of 14 days in 12 months, and conception rate to first service up 10% to just over 54%. First service submission rate is now 75%.

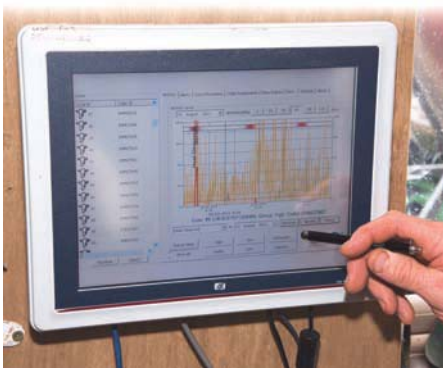
As well as good results, Tim has improved the system further by installing a segregation gate that directs cows as they leave the parlour depending whether they are on heat. Regular updates to the parlour software that 'speaks' to the gate means that it knows which cows to 'syphon' off. 'It's far less stressful for the cows and easier for us.'

While staff still note bulling cows manually when they see them, Tim knows they are monitoring activity far more accurately with a sophisticated electronic system. 'But it also flags up those with reduced activity. 'Quiet' cows and any abnormal patterns in behaviour also get onto our radar.'



Tim Downes using his heat detection system

Tim's vet, James Marsden from Shropshire Farm Vets, is a true convert to electronic heat detection. 'The benefits really come to the forefront in Tim's herd where the aim is to get as many cows as possible to calve in the first three weeks of the calving season.' Two factors affect this; the submission rate then the conception rate,' he says. 'Conception rates rely on many factors such as body condition, nutrition, health and timing of service. But the submission rate is solely dependent on heat detection - the better the heat detection, the better submission rate.'



James is in no doubt that the access to 24/7 activity data and being able to pick up patterns from Tim's Silent Herdsman is playing a major part in picking up more heats and helping to avoid mis-timed AI, and its associated problems.

'Excellent heat detection is a prerequisite of progressive dairy farming,' adds James. 'Heats must be picked up throughout the day and night and abnormalities sorted out quickly. Proven electronic systems can do this; it is certainly helping Tim achieve an even shorter calving period, which in turn plays its part in easier herd management, better health and welfare for the herd and more profit on the bottom line.'


Tim Downes' cows

STUDENT DIARY

Emily Collier, Usk, Monmouthshire

Fourth year student, University of Bristol

British blondes

Exams are over, the horse is home for the summer and the weather is finally on our side! It was this blissfully optimistic mindset that gave me the spontaneous idea to go to The Royal Welsh Show.

Within two hours, the car was packed, I had managed to grab a couple of unsuspecting friends and we were off to Builth Wells. Growing up in a community where 'The Show' is something of a household name, I was more than excited at the prospect of visiting again and it certainly didn't disappoint. We arrived at the YFC Village worried about our weak Welsh accents and trying to remember tractor makes but we instantly felt at home. It is a real community. In the livestock sheds, breeders all know each other and whole families gather together to reminisce about old times and look to the future. The animals on display were, of course, the best of the best and seeing them was a privilege. They had all my favourite breeds along with the associated stalls providing more information... although when my friend, Jonnie, walked into the 'British Blonde Society' stall, I don't think it quite lived up to his expectations!

Not only are these events an amazing display of real farming, real produce and down to earth people but they are also a key venue for talks and discussion, generating valuable opinions and decisions that will shape the future of farming. A particularly interesting topic at the moment is lameness. Bristol is hosting the 'International Ruminant Lameness Conference' this year, and when they needed student volunteers to help out I was the first to apply.

It shocked me to learn that an average 150 cow dairy herd loses nearly £15,000 a year due to lameness problems. It is an issue that has long taken a back seat with other factors, such as nutrition, taking priority. But it is now clear that tackling lameness is vital when farmers are constantly being pushed to increase productivity and margins.

The factors affecting lameness scores are numerous and varied - housing, slurry management, bedding, nutrition - the list goes on. Yet in dairy farming the overall aim is clear - to improve milk yield. However, aside from the obvious welfare benefits, the economic gains to be had in sheep farming may not be so obvious or measurable so I am particularly looking forward to hearing Dr Becky Whay's lecture on motivations for tackling lameness in both cattle and sheep. She is one of my lecturers too so I'll be proud to see Bristol talent on the international stage.

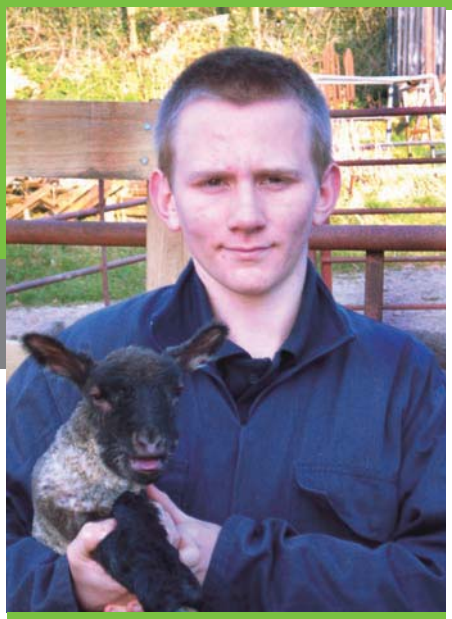
About Me

I decided when I was seven that I was going to be a vet, and that I wanted to study at Bristol University. I am proud to say that's where I find myself now. I have lived in the same village in Monmouthshire all my life, surrounded by agriculture. I used to spend every spare moment with the horses, which were kept on a sheep farm. I would spend hours in the sheds at lambing time eagerly watching for which ewe would be next, and was always on hand to help with the shearing. I went to several (rather wild) YFC barn dances and the agricultural shows were the highlight of my summers. In addition to many weeks at local vet practices and equine centres, I have worked on the pig unit at Hartpury College and on a couple of local dairy farms; I actually loved the early starts, much to my own surprise! I also helped with lambing a flock of 1,000 ewes near Bridgend, which was certainly a steep learning curve but one which I fully enjoyed.

STUDENT DIARY

Sam Bowker, Exeter, Devon

Fifth year veterinary student, Cambridge University

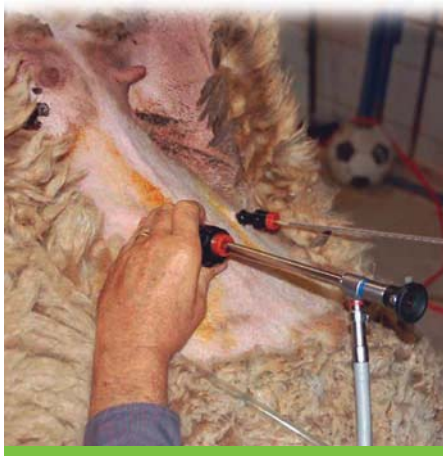


Two-thirds of a vet?

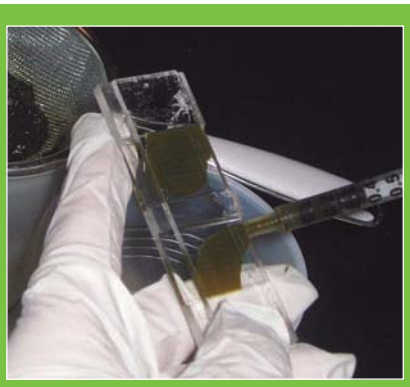
It feels pretty remarkable that having finished my fourth year and with the fifth now here, I should have two-thirds of the knowledge of a vet, although it certainly doesn't feel like it. That said, I'm sure that as the course gets more practical in the last two years, skills will develop and confidence will grow - I'm really looking forward to it. Thankfully all exams were passed, and I've enjoyed the chance to relax a little during the summer break.

After term finished, I had a couple of weeks off, including a week in Scotland with my housemates, doing the 3-peaks challenge, and I was lucky enough to have tickets for the Wimbledon men's semi-finals. I'm now back into the swing of seeing practice, and trying to apply what knowledge I can remember. Currently I'm doing two weeks of small animal experience, and before that I had an excellent week with a sheep vet in North Devon.

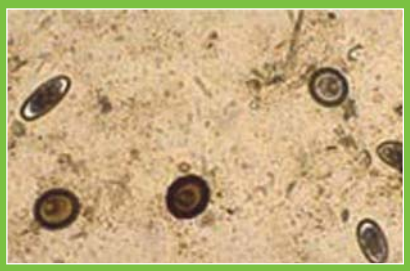
It was great to observe A.I. in ewes - the method is fascinating. Instead of inseminating through the conventional route, in sheep it is more effective to go in through the abdomen and inject the semen straight into the uterine horns. The ewes are sedated, put onto crates and are then elevated at the back end (so that the abdominal contents fall out of the way). Two holes are then made in the skin just in front of the udder, and an endoscope is put in one and the semen injected in through the other. Although some people have concerns about such an invasive procedure, it appeared to me to be done with the minimum of fuss and complication rates are low.



A.I. in sheep – inseminating straight into the uterus



Performing a faecal egg count



Worm eggs seen under the microscope

The importance of parasitism in sheep medicine was also evident; as I spent a good deal of time performing faecal egg counts (FEC). It is always encouraging to find that what you are taught at university is actually used in the real world, and I was struck at how useful a tool FEC is. Farmers can save a lot of money by checking if their animals really do need worming - it may be that the worm burden is negligible, and savings may be made on drenching. Another benefit of targeted parasite treatment is the reduction in the rate of resistance development to anthelmintics.

At home, life remains as busy as ever. Dad is looking to install a biomass boiler, the first batch of ewes are in with the ram, and a new bull ('Herbie') has arrived to replace Henry. I'm looking forward to a couple of weeks at home, but in the meantime I've got more work experience and am helping out at a Christian camp for young people.

About Me

I am a vet student about to start my fifth year of a six year course at Cambridge University. I grew up on a mixed livestock farm near Exeter in Devon. At home we milk 150 Friesian-type dairy cows, lamb 300 ewes (of which I have a flock of 25 pedigree Charollais), run 20 Devon beef sucklers, and until recently had an outdoor herd of 750 sows.

We also have cider orchards, 60 acres of spring barley, and run a Christmas shop during the month of December, selling trees, wreaths and meat from the farm, with four reindeer helping to draw the punters in! I'm a member of YFC at home who loves sport, and I hope to practise as a large animal vet once I graduate.

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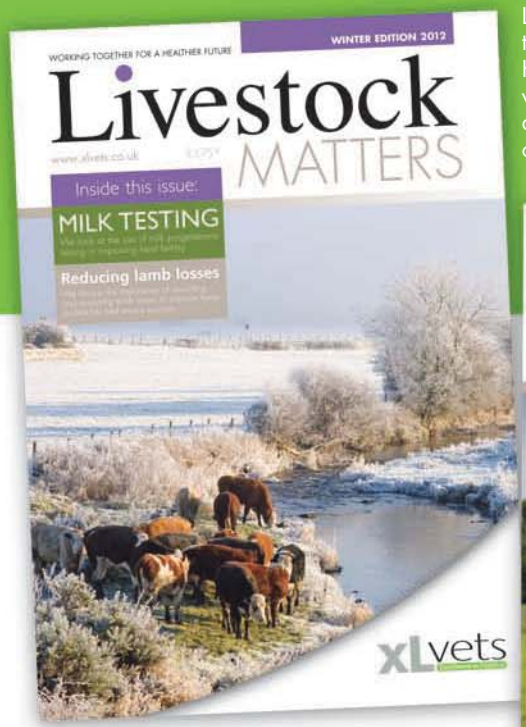

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